Inevitable Technology Trends

Idea In Short

Technology will not stop evolving, so embrace continuous upgrading and Artificial Intelligence as inevitable forces. The future belongs to those who race with the machines rather than against them.

Becoming: The Endless Newbie

Kevin Kelly, co-founder of Wired magazine, wrote The Inevitable to explain how Artificial Intelligence [AI] will change everything. The book describes 12 technological forces that will shape the future, starting with becoming. Technology changes so fast that the most important technologies dominating life 30 years from now have not yet been invented. The pace of change is not linear but accelerating through its second and third derivatives. We should view ourselves as endless newbies in relation to technology, perpetually learning and adapting to tools that did not exist moments ago. 1

Upgrading Is a New Hygiene

Information flows are continuous, making the concept of version 1.0 and 2.0 antiquated. The old model relied on product shipping cycles and shrink-wrapped CD-ROMs on store shelves. Software updates now flow constantly, like the Tesla Model S updating its windshield wiper algorithm after early users complained about a glitch. Even if you resist updates, you must accept them eventually. Hence the word inevitable. Continuous upgrading becomes a form of digital hygiene that no one can avoid. The organizations and individuals who embrace this rhythm will outpace those who cling to static software and fixed capabilities.

Protopia: Neither Utopia Nor Dystopia

The future is not utopia, meaning perfect heaven or nirvana. It is also not dystopia, meaning

a broken and ruined world. Kelly calls it protopia, a state of becoming, progressing and changing. The subtle progress is not dramatic or exciting, and it is easy to miss. Protopia generates almost as many new problems as new benefits. Intelligence will flow into everyday objects like electricity, creating an imperceptible grind of progress. This vision differs from the traditional technology adoption lifecycle because the change becomes so ubiquitous that avoidance is impossible. The future seeps in rather than arrives with fanfare.

The Internet Was Not Like Television

People initially thought the internet would be like television on a computer. That prediction was spectacularly wrong. No one predicted that users would generate enormous amounts of free, widely available content themselves. YouTube, Instagram, Facebook, Twitter, TripAdvisor and Yelp all emerged from user-generated creation. Kelly notes that 300 hours of video appears on YouTube every minute, a ratio of 18,000 to one. This pattern suggests that the next generation of technology will also surprise us. The future web will connect physical items, preserve earlier versions of websites and anticipate your actions and needs. It will function as a low-level constant presence, always around us and always on.

Old Watson Is Not the New Watson

IBM's famous supercomputer beat the Jeopardy champion in 2011, occupying a room full of computers. The new Watson spreads across a network of distributed computing, running several hundred instances of AI at once. For Star Trek fans, the analogy is the Borg: we are Watson. Kelly explains that this kind of AI can scale up or down on demand. Because AI improves as people use it, Watson grows smarter continuously. Anything it learns in one instance transfers quickly to all others. This distributed intelligence model means that AI capabilities compound across every user and every interaction, creating exponential rather than linear improvement.

DeepMind and Rapid Machine Learning

Google bought DeepMind, a London-based startup, in 2015. Researchers there taught an AI how to learn to play video games. The system started playing randomly, then improved within 30 minutes. One hour later, it played almost perfectly. Within a few hours, without any additional coaching from its creators, the AI could beat humans in half of 49 Atari games. This demonstration reveals something profound about machine learning. Artificial

Intelligence does not simply follow rules but discovers strategies through experimentation. The speed of learning surpasses human capability in specific domains, which has implications for every industry that involves pattern recognition and optimization. 2

Investment in AI and Cheaper Computing

Private investment in AI grew at a 70 percent compound annual growth rate over four years when Kelly wrote the book. He predicted that the next thousand startups would take something and add AI to it. Smart cooking, smart laundry, smart lawn mowing, smart sports and smart driving represent an endless list. This transformation requires cheaper and more powerful computing. Graphics processing units [GPU], historically used for Xbox gaming and Hollywood computer-generated imagery, enable the parallel processing that neural networks require. Nvidia, the leading GPU chipmaker, benefited enormously from this demand. The convergence of cheap computation, massive data and advanced algorithms created the foundation for the AI revolution that continues to accelerate.

Big Data Is the Fuel

Andrew Ng, the former chief scientist at Baidu and adjunct professor at Stanford, explained the relationship between AI and data. He compared AI to building a rocket ship that requires a huge engine and a lot of fuel. The learning algorithms serve as the engine, while the massive amounts of data serve as the fuel. Artificial minds need enormous quantities of data to learn effectively. Fortunately for AI systems, the world contains vast amounts of data in books, pictures, videos and unstructured formats. The abundance of data means that AI capabilities will continue expanding as more information becomes digitized and accessible for training purposes.

Many Kinds of Smartness

Kelly notes that we do not know the full taxonomy of intelligence yet. Artificial Intelligence is smart in many different ways, just as humans possess different types of intelligence. The most striking observation in the book is that we need to invent intermediate intelligence that can help us design yet more rarefied intelligence we could not design alone. This recursive improvement loop suggests that AI development will eventually exceed human comprehension in specific domains. The diversity of machine intelligence means that different AI systems will excel at different tasks, creating a rich ecosystem of specialized

capabilities rather than a single monolithic intelligence.

Race With the Machines

Kelly estimates that 70 percent of jobs today will be replaced by some form of automation. While that sounds frightening, it does not have to be devastating. The majority of AI work will involve things only robots can do. Some displacement is inevitable, and Vikram Pandit, former chief executive officer of Citigroup, said 30 percent of banking jobs would disappear. Schumpeter would argue this creative destruction is inevitable and liberating. The opportunity lies in redirecting human effort toward work that is more creative, value-added, unique, human and emotive. Repetitive tasks belong to robots. The future belongs to those who run with the machines, leveraging AI as a collaborator rather than fighting it as a competitor. 3

- 1McKinsey On Automation And The Future Of Work
- 2World Economic Forum On AI And Jobs
- 3Stanford AI Index Report

Summary

Kevin Kelly argues that we are at the beginning of the beginning. Technology flows like electricity into every object and process. Artificial Intelligence will displace repetitive work but create new opportunities. Race with the machines, not against them, and stay endlessly curious.